Texas State Soil and Water Conservation Board
Clean Water Act §319(h) Nonpoint Source Grant Program
FY 2012 Workplan 12-03

SUMMARY PAGE			
Title of Project	Texas Silvicultural Best Management Practices Education and Implementation Project		
Project Goals	• Improve water quality through increased BMP implementation • Deliver effective education, outreach, and technical assistance on BMPs • Assess silvicultural BMP implementation • Address emerging issues		
Project Tasks	(1) Project Administration; (2) BMP Implementation Evaluation; (3) Education and Outreach; (4) Technical Assistance; (5) Emerging Issues;		
Measures of Success	• Increase in overall BMP implementation • Increase in soil savings and sediment load reductions • Conduct 7 training workshops per year on BMPs to the forestry sector • Development of innovative, online technology transfer applications		
Project Type	Implementation (X); Education (X); Planning ( ); Assessment ( ); Groundwater ( )		
Status of Waterbody on *2010 Texas Integrated Report*	Segment ID	Parameter	Category
	0403	DO	4a
	0505	Bacteria	5a
	0508, 0511	Bacteria, DO, pH	4a
	0612	Bacteria	5b
	0804G	Bacteria, DO	5b
	0901	Bacteria	5c
	1221	Bacteria	5b
	1804A	Bacteria	5c
	1810	Bacteria	4b
Project Location (Statewide or Watershed and County)	**Counties**: Anderson, Angelina, Austin, Bandera, Bastrop, Bell, Bexar, Blanco, Bosque, Bowie, Brazoria, Brown, Burnet, Caldwell, Callahan, Camp, Cass, Chambers, Cherokee, Coke, Coleman, Comal, Comanche, Concho, Coryell, Delta, Eastland, Edwards, Erath, Fannin, Fayette, Fisher, Fort Bend, Franklin, Freestone, Galveston, Gillespie, Gregg, Grimes, Guadalupe, Hamilton, Hardin, Harris, Harrison, Hays, Henderson, Hood, Hopkins, Houston, Hunt, Jasper, Jefferson, Jones, Kaufman, Kendall, Kerr, Kimble, Lamar, Lampasas, Leon, Lee, Liberty, Llano, Madison, Marion, Mason, Matagorda, McCulloch, Medina, Menard, Milam, Mills, Montgomery, Morris, Nacogdoches, Navarro, Newton, Nolan, Orange, Palo Pinto, Panola, Parker, Polk, Rains, Real, Red River, Rockwall, Runnels, Rusk, Sabine, San Augustine, San Jacinto, San Saba, Schleicher, Shackelford, Shelby, Smith, Somervell, Stephens, Sutton, Taylor, Titus, Tom Green, Travis, Trinity, Tyler, Upshur, Van Zandt, Walker, Waller, Wharton, Williamson, Wood **Watersheds**; Austin-Oyster, Austin-Travis Lakes, Bois D'arc-Island, Brady, Buchanan-Lyndon B. Johnson, Buffalo-San Jacinto, Caddo Lake, Cedar, Central Matagorda Bay, Cibola, Concho, Cowhouse, Dry Devils, East Fork San Jacinto, East Galveston Bay, East Matagorda Bay, Hondo, Hubbard, Jim Ned, Lake Fork, Lake O' the Pines, Lampasas, Leon, Little, Little Cypress, Llano, Lower Angelina, Lower Brazos, Lower, Colorado, Lower Colorado-Cummings, Lower Neches, Lower Sabine, Lower Sulphur, Lower Trinity, Lower Trinity-Kickapoo, Lower Trinity-Tehuacana, Medina, Middle Brazos-Lake Whitney, Middle Brazos-Palo Pinto, Middle Colorado, Middle Colorado-Elm, Middle Neches, Middle Sabine, North Bosque, North Galveston Bay, North Llano, Nueces Headwaters, Pecan Bayou, Pedernales, Pine Island Bayou, Richland, Sabine Lake, San Bernard, San Gabriel, San Marcos, San Saba, South Llano, Spring, Sulphur Headwaters, Toledo Bend Reservoir, Upper Angelina, Upper Clear Fork Brazos, Upper Colorado, Upper Devils, Upper Guadalupe, Upper Neches, Upper Sabine, Upper San Antonio, Village, West Fork San Jacinto, West Galveston Bay, West Nueces, White Oak Bayou, Yegua		
Key Project Activities	Hire Staff (X); Surface Water Quality Monitoring ( ); Technical Assistance (X); Education (X); Implementation (X); BMP Effectiveness Monitoring ( ); Demonstration (X); Planning ( ); Modeling ( ); Bacterial Source Tracking ( ); Other ( )		
Texas NPS Management Program Elements	• Element One – LTGs 1, 2, 3, 6 • Element One – STGs 3A, 3B, 3C, 3F • Elements Two and Three		

Project Costs	Federal	$328,134	Non-Federal	$295,660	Total	$623,794
Project Management	• Texas A&M Forest Service					
Project Period	October 1, 2012 –March 31, 2015					

Part I – Applicant Information

Applicant							
Project Lead	Hughes Simpson						
Title	Program Coordinator						
Organization	Texas A&M Forest Service						
E-mail Address	hsimpson@tfs.tamu.edu						
Street Address	200 Technology Way, Suite 1281						
City	College Station	County	Brazos	State	TX	Zip Code	77845
Telephone Number	979-458-6650			Fax Number	979-458-6655		

Project Partners	
Names	Roles & Responsibilities
Texas State Soil and Water Conservation Board (TSSWCB)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TCEQ.
Texas A&M Forest Service (TFS)	Provide leadership and direction for overall project implementation, management, administration, and coordination of activities with partners.
Texas Forestry Association (TFA)	Assist with education, training, provide framework for organization of cooperators, provide communication within forestry community
Texas Logging Council (TLC)	Assist with education and training, support program efforts

Part II – Project Information

Project Type							
Surface Water	X	Groundwater					
Does the project implement recommendations made in (a) a completed WPP, (b) an adopted TMDL, (c) an approved I-Plan, or (d) a Comprehensive Conservation and Management Plan developed under CWA §320?				Yes	X	No	
If yes, identify the document.	Lake O' The Pines TMDL and Implementation Plan Adams and Cow Bayou TMDL Plum Creek WPP Leon River WPP						
If yes, identify the agency/group that developed and/or approved the document.	Lake O' the Pines – NETMWD/TCEQ Adams and Cow Bayou – SRA/TCEQ Plum Creek WPP – TAES/TSSWCB Leon River WPP – BRA/TSSWCB			Year Developed	2006/2008 2007 2008 2012		

Watershed Information				
Watershed Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	305(b) Category	Size (Acres)
Lake O' The Pines	111403050401 – 111403050405, 111403060101	0403	4a	157,313
Sabine River Basin	120100020405, 120100020506, 120100020601, 120100020603, 120100020608, 120100020706, 120100020902, 120100020906, 120100021003, 120100021010	0505	5a	284,209
Adams and Cow Bayou	120100051400, 120100051301, 120100051302	0508 0511 0511	4a 4a 4a	319,770
Attoyac Bayou	120200050301 – 120200050307, 120200050401 – 120200050406, 120200050501	0612	5b	205,032

Middle Trinity River Basin	120301050401 – 120301050410, 120301050501 – 120301050504, 120301070101 – 120301070111, 120301070201 – 120301070206, 120301070301 – 120301070312, 120301080101 – 120301080110, 120301080201 – 120301080206, 120301080301 – 120301080306, 120301080401 – 120301080407, 120301090101 – 120301090108, 120301090201 – 120301090207, 120301090301 – 120301090308, 120301090401 – 120301090407, 120302010101 – 120302010110, 120302010201 – 120302010208, 120302010301 – 120302010305, 120302010401 – 120302010406, 120302010501 – 120302010506, 120302010601 – 120302010605, 120302010701 – 120302010707, 120302020101 – 120302020104, 120302020201 – 120302020203, 120302020301 – 120302020308, 120302020401 – 120302020409, 120302020501 – 120302020507, 120302020601 – 120302020604	0804G	5b	498,823

Cedar Bayou	120402030101 – 120402030105	0901 0902	5c .	134,782
Lampasas River	120702030101 – 120702030509	1217 1217A 1217B 1217C	2	839,800
Plum Creek	121002030401 – 121002030407, 121002030409, 121002030410	1810	4b	213,830
Geronimo Creek	121002020110, 121002020111	1804A	5c	4,4,152
Upper Llano River	120902020101 – 120902020109, 120902020201 – 120902020208, 120902020301 – 120902020306, 120902030101 – 120902030108, 120902030201 – 120902030206, 120902030301 – 120902030305, 120902030401 – 120902030405,	1415-05 1415-06	1 1	510,148
Leon River	120702010501 – 120702010509, 120702010601 – 120702010605, 120702010701 – 120702010705, 120702010801 – 120702010806, 120702010901 – 120702010908, 120702011002	1221	5b	886,277

Water Quality Impairment

Describe all known causes (pollutants of concern) of water quality impairments or concerns from any of the following sources: *2010 Texas Integrated Report*, Clean Rivers Program Basin Summary/Highlights Reports or other documented sources.

2010 Texas Integrated Report

SegID: 0403 Lake O' the Pines
Water body location: From Ferrell's Bridge Dam in Marion County to a point 1.0 km (0.6 miles) downstream of US 259 in Morris/Upshur County, up to normal pool elevation of 228.5 feet (impounds Big Cypress Creek)

Depressed dissolved oxygen	4a	2000

SegID: 0201A Mud Creek (unclassified water body)
From the confluence of the Red River to the upstream perennial portion of the stream northwest of De Kalb in Bowie County

depressed dissolved oxygen	5c	2006

SegID: 0302 Wright Patman Lake
From Wright Patman Lake Dam in Bowie/Cass County to a point 1.5 kilometers (0.9 miles) downstream of Bassett Creek in Bowie/Cass County, up to the normal pool elevation of 225 feet (impounds the Sulphur River)

depressed dissolved oxygen	5a	1996

SegID: 0303B White Oak Creek (unclassified water body)
From the confluence of the Sulphur River north of Naples in Morris County to the upstream perennial portion of the stream east of Sulphur Springs in Hopkins County

depressed dissolved oxygen	5b	2000

SegID: 0401 Caddo Lake
From the Louisiana State Line in Harrison/Marion County to a point 12.3 km (7.6 miles) downstream of SH 43 in Harrison/Marion County, up to pool elevation of 168.5 feet (impounds Big Cypress Creek)

depressed dissolved oxygen	5c	2000

SegID: 0401A Harrison Bayou (unclassified water body)
From the confluence of Caddo Lake east of Karnack in Harrison County to the upstream perennial portion of the stream east of Marshall in Harrison County

depressed dissolved oxygen	5b	2000

SegID: 0402 Big Cypress Creek Below Lake O' the Pines
From a point 12.3 km (7.6 miles) downstream of SH 43 in Harrison/Marion County to Ferrell's Bridge Dam in Marion County

depressed dissolved oxygen	5b	2010

SegID: 0402A Black Cypress Bayou (unclassified water body)
Perennial stream from the confluence with Big Cypress in Marion County up to 7.5 miles above FM 250 in Cass County.

depressed dissolved oxygen	5b	2000

SegID: 0406 Black Bayou
From the Louisiana State Line in Cass County to FM 96 in Cass County

depressed dissolved oxygen	5b	2002

SegID: 0407 James' Bayou
From the Louisiana State Line in Marion County to Club Lake Road northwest of Linden in Cass County

depressed dissolved oxygen 5b 2000

SegID: 0409 Little Cypress Bayou (Creek)
From the confluence of Big Cypress Creek in Harrison/Marion County to a point 1.0 km (0.6 miles) upstream of FM 2088 in Wood County

depressed dissolved oxygen 5b 2000

SegID: 0501B Little Cypress Bayou (unclassified water body)
From the confluence with the Sabine River to the headwaters west of Reese in Orange County.

depressed dissolved oxygen 5c 2006

SegID: 0502A Nichols Creek (unclassified water body)
From the confluence of the Sabine River to the upstream perennial portion of the stream south of Kirbyville in Newton and Jasper Counties

depressed dissolved oxygen 5c 2002

SegID: 0502E Cypress Creek (unclassified water body)
From the confluence of Sabine River upstream to headwaters 2.5 miles northeast of Buna in Jasper County

depressed dissolved oxygen 5b 2010

SegID: 0505B Grace Creek (unclassified water body)
Perennial stream from the confluence with the Sabine River up to FM 1844 in Gregg County

depressed dissolved oxygen 5c 2000

SegID: 0505G Wards Creek (unclassified water body)
From the confluence with Hatley Creek to the headwaters east of Hallsville in Harrison County

depressed dissolved oxygen 5c 2000

SegID: 0506A Harris Creek (unclassified water body)
From the confluence of the Sabine River northeast of Winona in Smith County to the upstream perennial portion of the stream east of Tyler in Smith County

depressed dissolved oxygen 5b 2000

SegID: 0604D Piney Creek (unclassified water body)
From the confluence of the Neches River at the Polk/Tyler/Angelina County lines east of Corrigan to the upstream perennial portion of the stream east of Crockett in Houston County

depressed dissolved oxygen 5c 2004

SegID: 0508 Adams Bayou Tidal
From the confluence with the Sabine River in Orange County to a point 1.1 km (0.7 miles) upstream of IH 10 in Orange County

depressed dissolved oxygen 5a 1996

SegID: 0508A Adams Bayou Above Tidal (unclassified water body)
From a point 1.1 km (0.7 miles) upstream of IH 10 in Orange County to the upstream perennial portion of the stream northwest of Orange in Orange County

depressed dissolved oxygen	5a	2000

SegID: 0508B Gum Gully (unclassified water body)
From the confluence of Adams Bayou to the upstream perennial portion of the stream northwest of Orange in Orange County

depressed dissolved oxygen	5a	2000

SegID: 0508C Hudson Gully (unclassified water body)
From the confluence with Adams Bayou to the headwaters near US 890 in Pinehurst in Orange County

depressed dissolved oxygen	5a	2002

SegID: 0511 Cow Bayou Tidal
From the confluence with the Sabine River in Orange County to a point 4.8 km (3.0 miles) upstream of IH 10 in Orange County

depressed dissolved oxygen	5a	2000

SegID: 0511A Cow Bayou Above Tidal (unclassified water body)
From a point 4.8 km (3.0 miles) upstream of IH 10 in Orange County to the upstream perennial portion of the stream northeast of Vidor in Orange County

depressed dissolved oxygen	5a	2000

SegID: 0604M Biloxi Creek (unclassified water body)
From the confluence with the Neches River southeast of Diboll to FM 325 east of Lufkin in Angelina County

depressed dissolved oxygen	5c	2006

SegID: 0605A Kickapoo Creek in Henderson County (unclassified water body)
From the confluence of Lake Palestine east of Brownsboro in Henderson County to the upstream perennial portion of the stream northeast of Murchison in Henderson County

depressed dissolved oxygen	5c	2006

SegID: 0606 Neches River Above Lake Palestine
Neches River Above Lake Palestine - from a point 2.2 kilometers (1.4 miles) downstream of SH 31 [6.7 kilometers (4.2 miles) downstream of FM 279] in Henderson/Smith County to Rhines Lake Dam in Van Zandt County

depressed dissolved oxygen	5c	2004

SegID: 0607 Pine Island Bayou
From the confluence with the Neches River in Hardin/Jefferson County to FM 787 in Hardin County

depressed dissolved oxygen	5b	2000

SegID: 0607A Boggy Creek (unclassified water body)
From the confluence of Pine Island Bayou upstream to the confluence with an unnamed tributary 4 km downstream of the crossing of the Southern Pacific Railroad.

depressed dissolved oxygen	5b	2000

SegID: 0607B Little Pine Island Bayou (unclassified water body)
From the confluence of Pine Island Bayou southwest of Lumberton in Hardin County to the upstream perennial portion of the stream west of Kountze in Hardin County

depressed dissolved oxygen	5b	2000

SegID: 0607C Willow Creek (unclassified water body)
From the confluence of Pine Island Bayou north of Nome in Jefferson County to the upstream perennial portion of the stream east of Devers in Liberty County

depressed dissolved oxygen	5b	2000

SegID: 0608C Cypress Creek (unclassified water body)
From the confluence of Village Creek (0608) east of Kountze in Hardin County to the confluence with Bad Luck Creek northwest of Kountze in Hardin County

Depressed dissolved oxygen	5b	2006

SegID: 0608E Mill Creek in Hardin County (unclassified water body)
From the confluence of Village Creek (0608) west of Silsbee in Hardin County upstream to headwaters northwest of Silsbee in Hardin County

depressed dissolved oxygen	5c	2006

SegID: 0615 Angelina River/Sam Rayburn Reservoir
The riverine portion of Sam Rayburn Reservoir from a point 5.6 kilometers (3.5 miles) upstream of Marion's Ferry to the aqueduct crossing 1.0 kilometer (0.6 mile) upstream of the confluence of Paper Mill Creek

depressed dissolved oxygen	5b	2002

SegID: 0804G Catfish Creek (unclassified water body)
Twenty mile stretch of Catfish Creek running upstream from US 287 in Anderson Co., to Catfish Creek Ranch Lake just upstream of SH 19 in Henderson County:

depressed dissolved oxygen	5b	2006

Project Narrative

Problem/Need Statement

Many waterbodies in East Texas have been placed on the 2010 Texas Integrated Report for dissolved oxygen and nutrient impairments. These impairments may be caused by point source and/or nonpoint source (NPS) contamination. Significant forestry production occurs in this region, making it vital to implement silvicultural best management practices (BMPs) to abate and prevent NPS pollution. The TSSWCB is the lead agency for planning, implementing, and managing programs for preventing agricultural and silvicultural nonpoint source pollution, and collaborates with Texas A&M Forest Service to address NPS pollution resulting from forest operations.

In other parts of the state, water resource issues may be mitigated by applying many of the concepts, principles, and experience that TFS has gained over the past two decades in addressing water issues in East Texas. Sound land stewardship, conservation planning, and riparian management are potential solutions to water quality concerns. As new policies are developed, it is critical for TFS to take a proactive approach in exploring these issues to ensure our water resources are protected.

Several of the waterbodies mentioned above are in the process of developing a TMDL Implementation Plan or Watershed Protection Plan to address their impairment. In coordination with these efforts, TFS will conduct training, education, and outreach programs for landowners, foresters, loggers, and the general public that promote the proper implementation of forestry BMPs to protect water quality in these priority watersheds. To measure the effectiveness of the educational component of this project, TFS will also monitor BMP implementation on forestry operations occurring in these areas, as well as throughout East Texas. The efforts of this project will play an integral role in ensuring that an improvement in water quality is achieved.

Past TFS projects funded by TSSWCB (specifically the 08-03, 05-4, and 02- 4 Texas Silvicultural Nonpoint Source Pollution Prevention Project) have resulted in the institutionalization of various BMP programs. For example, forest product manufacturers now have very strict BMP policies, including a process for auditing their suppliers for BMP implementation on the tracts they harvest. These mills also deliver education and outreach to the private landowners from which they procure wood. Internal BMP training workshops are commonplace, and attendance by employees and contractors is required. All of these programs are modeled after ones created by TFS.

TFS personnel recommend BMPs to be installed in all applicable management plans written for forest landowners. TFS foresters share their working knowledge of BMPs with landowners in one-on-one interactions. BMP programs have become a regular component of landowner meeting discussions and public interest groups regularly request silvicultural BMP presentations.

The continuation of a strong, statewide presence through educational outreach and implementation evaluations is necessary. This is especially important given the rate at which land is transferred to new owners, many of which may be unaware of BMPs. BMP implementation evaluations are the best measure of success for the non-regulatory program. Evaluations also ensure targeted BMP implementation within critically sensitive areas, identify any weaknesses in the BMP guidelines, and document where future efforts should be targeted. This project will continue to offer BMP educational programs to additional audiences, including absentee landowners. A comprehensive approach with continuing interagency coordination and public involvement will also be crucial.

Project Narrative

General Project Description (Include Project Location Map)

This project will prevent impacts to water quality from silvicultural NPS pollution by providing technical assistance, education, outreach, and training on BMPs. Coordinating project activities across numerous cooperators will help ensure project success, which is most effectively measured through an evaluation of silvicultural BMP implementation. It will also aim to address water resource issues throughout the state, drawing largely on the principles, concepts, and experience gained over the past 20 years in mitigating NPS pollution in East Texas.

Results from BMP implementation monitoring provide a clear assessment of project effectiveness, as well as identify where future efforts should be targeted. Due to the past performance of previous educational projects, private landowners have reached an all time high in BMP implementation. However, there is still room for improvement by this landowner type as well as during certain types of forest operations. This monitoring program will track voluntary BMP implementation by conducting 150 assessments of randomly selected silvicultural operations. TFS installed firebreaks for wildfire suppression will also be monitored for implementation of appropriate erosion control/rehabilitation measures.

Quantification of load reductions can be modeled using BMP implementation monitoring results. This will be done by using the Forest Land Erosion Evaluation for East Texas methodology developed by George Dissmeyer, USDA Forest Service. The results are derived from a comparison of estimated sedimentation, assuming current levels of BMP implementation compared to zero levels. This method draws from average erosion rates and recovery periods for various soil disturbances developed by Dissmeyer using the Modified Universal Soil Loss Equation on over 9,000 silvicultural sites. Other methods for quantifying load reductions will be investigated.

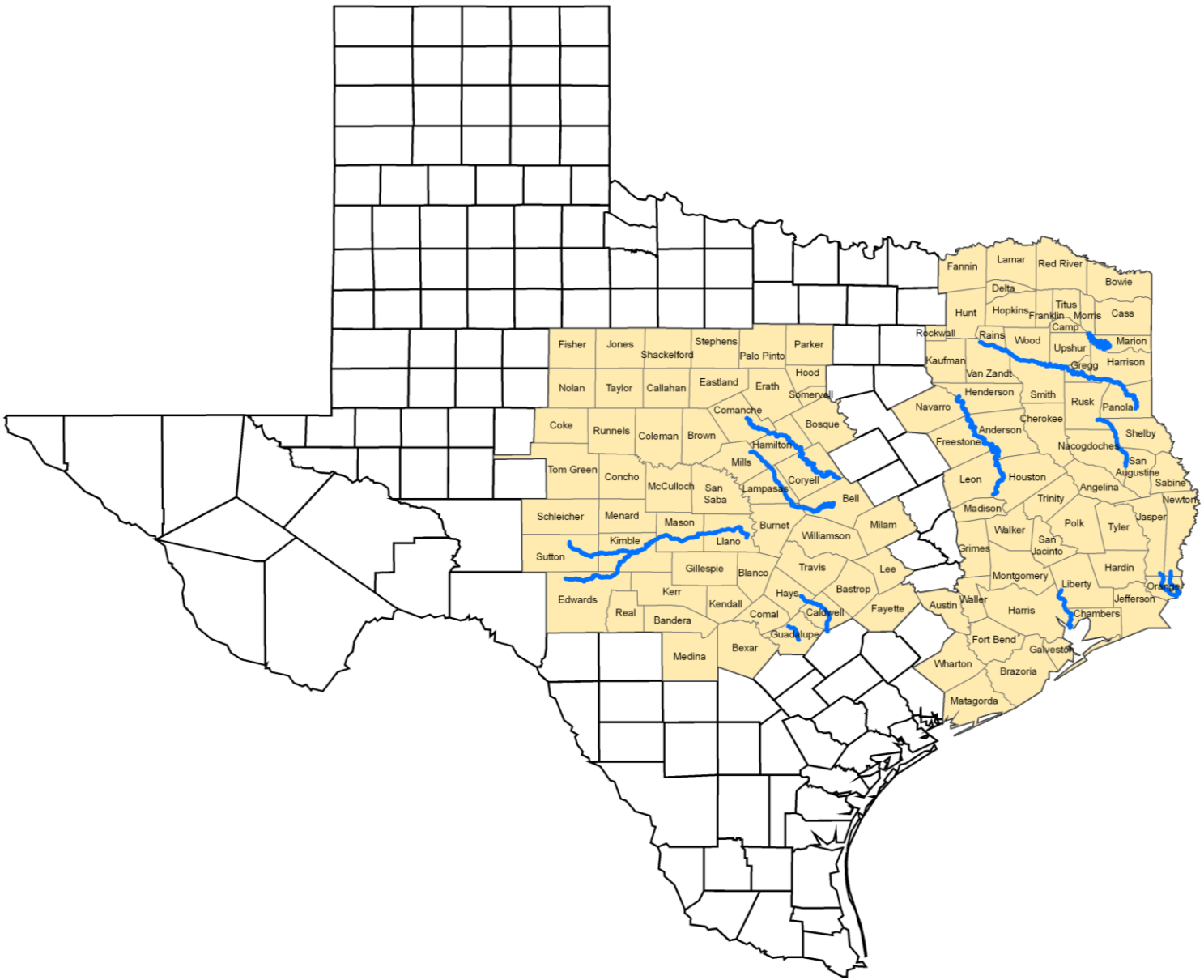
Educational programs will also be an integral part of this project. A minimum of 7 BMP workshops per year will be provided to foresters, contractors, landowners, agency staff, and other interested groups that focus on the proper implementation of BMPs and sustainable forestry practices. Local media will be used to promote project tasks, and a silviculture newsletter will promote various BMPs to landowners and natural resource professionals. This will increase communication and facilitate technology transfer between natural resource professionals, landowners, and contractors.

TFS will offer technical assistance to varying interest groups. A web based, GIS pre harvest BMP planning tool will be developed to help protect water resources during forest operations. Videos demonstrating proper BMP installation will be produced and hosted on the agency's website. TFS will also cooperate with the TSSWCB project "*Lone Star Healthy Streams – Riparian and Stream Ecosystem Education Program*," helping landowners understand the importance of restoring riparian areas. These types of interactions are vital to increasing BMP implementation rates.

A major focus of this project will be on priority watersheds. TFS will help facilitate the education, outreach, training, and monitoring in regards to silvicultural NPS as outlined in TMDL Implementation Plans and Watershed Protection Plans. In addition to focusing efforts on impaired watersheds, this project will also take a proactive approach at addressing emerging issues. Land stewardship in Central Texas is imperative due to the explosive population growth this area is experiencing. Staff will actively participate in water resource meetings throughout the region to ensure the protection of forest and water resources. Education, outreach, and technical assistance will be delivered to landowners and managers. Based on current weather forecasts, extended drought is predicted throughout the state, substantially increasing the risk of devastating wildfires. Rehabilitating these charred landscapes prior to substantial rainfall is critical to prevent impacts to water resources. TFS will investigate and provide technical assistance on these issues.

The TFS will lead and coordinate this project. TFS will continue to lead the wetland BMP coordinating committee and will be an active participant in the Southern Group of State Foresters water resources committee and four- state BMP meeting.

Figure 1: Project Location Map



Tasks, Objectives and Schedules						
Task 1	Project Administration					
Costs	Federal	$16,407	Non-Federal	$14,783	Total	$31,190
Objective	To effectively administer, coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports.					
Subtask 1.1	TFS will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all Project Partners.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 1.2	TFS will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 1.3	TFS will host coordination meetings or conference calls, at least quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. TFS will develop lists of action items needed following each project coordination meeting and distribute to project personnel.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 1.4	TFS will attend and participate in meetings as appropriate in order to communicate and coordinate project goals, activities, and accomplishments to interested parties. Such meetings may include, but not limited to, Clean Rivers Program Basin steering committees, TMDL and Watershed Protection Plan stakeholder meetings, NPS management, SWCD meetings, professional and trade associations, and other appropriate meetings of critical watershed stakeholders groups.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 1.5	TFS will develop a final report.					
	Start Date	Month 1	Completion Date	Month 30		
Deliverables	• Quarterly progress reports in electronic format • Reimbursement Forms and necessary documentation in hard copy format • List of action items from project coordination meetings • Notices, agendas, meeting materials, attendance lists, and summaries from all meetings attended • Final Report (electronic copy and 3 hard copies)					

Tasks, Objectives and Schedules						
Task 2	BMP Implementation Evaluation					
Costs	Federal	$98,440	Non-Federal	$88,698	Total	$187,138
Objective	To assess the voluntary adoption of Texas' recommended BMPs by forest landowners, managers, and contractors.					
Subtask 2.1	TFS will map silvicultural operations in East Texas using Digital Aerial Sketchmapping and/or Remote Sensing technology to identify sample sites for BMP implementation monitoring.					
	Start Date	Month 1		Completion Date	Month 26	
Subtask 2.2	TFS will conduct 150 BMP implementation evaluations on tracts in East Texas that meet suitability criteria.					
	Start Date	Month 3		Completion Date	Month 29	
Subtask 2.3	TFS will create and maintain a BMP GIS database for twelve digit HUCs.					
	Start Date	Month 3		Completion Date	Month 24	
Subtask 2.4	TFS will prepare and distribute a BMP Implementation Rate Evaluation Report to landowners and other interested entities.					
	Start Date	Month 26		Completion Date	Month 30	
Subtask 2.5	TFS will analyze and compare BMP implementation data collected during this project to past TSSWCB projects (FY02, FY05, and FY08) to identify future educational outreach needs.					
	Start Date	Month 28		Completion Date	Month 30	
Subtask 2.6	TFS will monitor 35 agency installed wildfire suppression firebreaks for compliance with the firebreak BMP/rehabilitation guidance in the state fire operations plan. Results from firebreak monitoring will be included in the project final report.					
	Start Date	Month 1		Completion Date	Month 30	
Subtask 2.7	TFS will quantify load reductions resulting from BMP implementation. This will be done utilizing the Forest Land Erosion Evaluation for East Texas methodology. Other methods, such as Texas BMP Evaluation Tool (TBET), for quantifying load reductions will be investigated.					
	Start Date	Month 28		Completion Date	Month 30	
Deliverables	• 150 site BMP implementation evaluations • BMP Implementation Rate Evaluation Report • Summary report from TFS firebreak monitoring • Load reductions resulting from BMP implementation					

Tasks, Objectives and Schedules						
Task 3	Education and Outreach					
Costs	Federal	$65,627	Non-Federal	$59,132	Total	$124,759
Objective	To increase water quality / BMP awareness to forest landowners, natural resource professionals, and the general public throughout Texas. Specifically, TFS will focus on the following priority watersheds: Lake O' the Pines, Adam's and Cow Bayou, Attoyac Bayou, Sabine River Basin, Middle Trinity River Basin, Cedar Bayou, Lampasas River, Plum Creek, Geronimo Creek, Upper Llano River, and Leon River.					
Subtask 3.1	TFS, in cooperation with project partners, will conduct a minimum of 4 BMP training workshops for loggers, foresters, and landowners per year for the promotion of conservation practices. Trainings may include, but are not limited to, core logger BMP workshops, forest road BMP workshops, stream crossing BMP workshops, and other appropriate workshops that promote BMP implementation.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 3.2	TFS will distribute quarterly newsletters (4/year) to forest landowners (*Texas Water Source*) in select priority watersheds and natural resource professionals (*Forest Stewardship Briefings*) across the state providing information on sustainable forestry and water resource protection. TSSWCB must approve all project-related content in any informational materials and promotional publications prior to distribution.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 3.3	TFS, in cooperation with project partners, will coordinate a minimum of 3 county landowner association workshops per year to promote sustainable forestry and water resource protection during forest operations.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 3.4	TFS will develop and provide educational information to absentee forest landowners on sustainable forestry and water resource protection through activities that may include, but are not limited to, semi-annual out of state, absentee landowner newsletter (*Forest Landowner Briefings*), project blog, presentations at landowner association meetings, online BMP picture gallery, and appropriate use of social media (i.e., Facebook). TSSWCB must approve all project-related content in any informational materials and promotional publications prior to distribution.					
	Start Date	Month 1	Completion Date	Month 30		
Deliverables	• Notices, agendas, meeting materials, attendance lists, and summaries from all meetings hosted and attended • Quarterly newsletters • Educational materials for absentee landowners, as developed and disseminated					

Tasks, Objectives and Schedules						
Task 4	Technical Assistance					
Costs	Federal	$49,220	Non-Federal	$44,349	Total	$93,569
Objective	To provide technical assistance to foresters, landowners, loggers and other interested groups on the proper implementation of BMPs.					
Subtask 4.1	TFS will provide BMP technical assistance during implementation monitoring evaluations (Task 2) to loggers, landowners, and foresters, if applicable.					
	Start Date	Month 3		Completion Date	Month 30	
Subtask 4.2	TFS will provide direct technical assistance on Texas BMP guideline interpretation, implementation, and financial incentive programs (Farm Bill) for water quality protection to individual forest landowners, foresters, and loggers with an emphasis on the priority watersheds.					
	Start Date	Month 1		Completion Date	Month 30	
Subtask 4.3	TFS, in cooperation with project partners and the Southern Group of State Foresters Water Resource Committee, will develop a web-based, GIS pre-harvest BMP planning tool to help protect water resources during forest operations.					
	Start Date	Month 1		Completion Date	Month 30	
Subtask 4.4	TFS will produce a minimum of 2 video clips demonstrating proper implementation of common forestry BMPs, which may include, but are not limited to, installation of waterbars, wing ditches, culverts, logging slash, and other appropriate practices that protect water quality during forestry operations.					
	Start Date	Month 1		Completion Date	Month 30	
Deliverables	• Web-based, GIS pre-harvest planning tool • 2 Video clips of BMP installation					

Tasks, Objectives and Schedules						
Task 5	Technical Assistance / Education / Outreach – Emerging Issues in Forestry					
Costs	Federal	$65,627	Non-Federal	$59,132	Total	$124,759
Objective	To increase water quality / BMP awareness and provide technical assistance to landowners, natural resource professionals, and the general public on emerging issues.					
Subtask 5.1	TFS will promote land stewardship in Central Texas to prevent water quality impacts through education, outreach, and technical assistance. Activities may include, but are not limited to, stewardship planning, riparian restoration, environmental awareness training, and other appropriate outreach methods.					
	Start Date	Month 1		Completion Date	Month 30	
Subtask 5.2	TFS will provide education and technical assistance on soil erosion control practices to prevent water resource impacts from occurring after wildfires. Brochures, fact sheets, and technical guides will be developed and distributed. TSSWCB must approve all project-related content in any informational materials and promotional publications prior to distribution.					
	Start Date	Month 1		Completion Date	Month 30	
Subtask 5.3	TFS will coordinate a minimum of 5 workshops/tours and provide technical assistance on land stewardship and wildfire rehabilitation.					
	Start Date	Month 1		Completion Date	Month 30	
Deliverables	• Educational materials including brochures, factsheets, and technical guides, as developed and disseminated • List of water resource meetings attended • Agendas and number of participants for 4 BMP training workshops/tours					

Tasks, Objectives and Schedules						
Task 6	Regional Inter-agency / Cooperator Coordination					
Costs	Federal	$32,813	Non-Federal	$29,566	Total	$62,379
Objective	To effectively coordinate project activities with natural resource agencies and project participants.					
Subtask 6.1	TFS will host annual Wetland / BMP coordinating committee meetings.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 6.2	TFS will work with local media which may include but not limited to, cooperating agency publications, trade magazines, newspaper, and other appropriate means to promote project activities.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 6.3	TFS will participate and assist in the coordination of the 2013 four-state BMP meeting in Louisiana. This meeting is conducted biennially and brings together a broad group of stakeholders from Arkansas, Louisiana, Oklahoma, and Texas.					
	Start Date	Month 1	Completion Date	Month 30		
Subtask 6.4	TFS will actively participate in the Southern Group of State Foresters Water Resources Committee.					
	Start Date	Month 1	Completion Date	Month 30		
Deliverables	• Notices, agendas, meeting materials, attendance lists, and summaries from all meetings attended					

Project Goals (Expand from Summary Page)

- To improve water quality in Texas and the 303(d)-listed segments' watersheds through the implementation of forestry BMPs.
- To provide technical assistance to landowners, contractors, and foresters.
- To increase the awareness and general understanding of BMPs to forest landowners, natural resource professionals and the general public through educational workshops, training courses, media outreach, and innovative technology transfer applications that encourage BMP implementation.
- To assess silvicultural BMP implementation in Texas through a statistically sound, technically defensible, and objective approach, providing a clear assessment of the effectiveness of the project's educational efforts and identifying areas to target for improvement.
- To proactively address emerging issues in forestry (wildfire rehabilitation and Central Texas land stewardship) through education, outreach, and technical assistance in an effort to minimize impacts to water resources anticipated from predicted weather patterns and population growth.

Measures of Success (Expand from Summary Page)

Increase forestry BMP implementation
The numerous education, training, outreach, and technical assistance that will be provided throughout the course of this project will increase voluntary BMP implementation to 95%.

Increase in Load Reductions and Soil Savings
An increase to show over 90,000 tons of soil savings (erosion) and 12,000 tons of sedimentation prevention will show the success of this project. Appropriate methodologies for load reductions other than the Forest Land Erosion Evaluation for East Texas tool will be investigated for applicability.

Conduct a minimum of 7 educational / training workshops per year to the forest sector
Delivering, high quality, effective educational / training workshops is critical to promoting BMP implementation. Educational workshops for landowners will focus on sustainable forestry and water resource protection. Training workshops targeting contractors will consist of regular "core" BMP workshops as well as focused sessions on stream crossings, forest roads, streamside management zones and online refresher courses.

Development of Innovative, Online Technology Transfer Applications
A user friendly web-based, GIS application to support pre-harvest planning, online video clips of commonly installed BMPs, and an online BMP picture gallery will lead to increases in BMP implementation and water quality protection.

2005 Texas Nonpoint Source Management Program **Reference (Expand from Summary Page)**
Goals and/or Milestone(s)
Element 1 – Explicit short- and long-term goals, objectives and strategies that protect surface and groundwater LTG: To protect and restore water quality from NPS pollution through assessment, implementation and education Objectives 1. Focus NPS abatement efforts, implementation strategies, and available resources in watersheds identified as impacted by NPS pollution. 2. Support the implementation of state, regional, and local programs to prevent NPS pollution through assessment, implementation, and education. 3. Support the implementation of state, regional, and local programs to reduce NPS pollution, such as the implementation of strategies defined in state-approved TMDL Implementation Plans and Watershed Protection Plans. 6. Increase overall public awareness of NPS issues and prevention activities. STG Three: Education: Conduct education and technology transfer activities to help increase awareness of NPS pollution and prevention activities contributing to the degradation of waterbodies by NPS. Objectives 1. Enhance existing outreach programs at the state, regional, and local levels to maximize the effectiveness of NPS education. 2. Administer programs to educate citizens about water quality and their potential role in causing NPS pollution. 3. Where applicable, expedite development of technology transfer activities to be conducted upon completion of BMP implementation 6. Implement public outreach and education to maintain and restore water quality in waterbodies impacted by NPS pollution.
Element 2 – Working partnerships and linkages to appropriate, state, interstate, tribal, regional, and local entities, private sector groups, and federal agencies.
Element 3 – Balanced approach that emphasizes both statewide NPS programs and on-the-ground management of individual watersheds

Estimated Load Reductions Expected (Only applicable to Implementation Project Type)
The education, outreach, training, and technical assistance components of this project will result in increased forestry BMP implementation (primarily improved forest roads, stream crossings, and streamside management zones) resulting in substantial load reductions as measured by the Forest Land Erosion Evaluation Tool for East Texas. Through the adoption of these BMPs by the forest sector, it is anticipated that the estimated pollutant loads reduced will be: • 12,000 tons prevented from entering East Texas streams, lakes, and rivers • 90,000 tons prevented from eroding from East Texas forestlands

Part III – Financial Information

Budget Summary			
Federal	$328,134	% of total project	53%
Non-Federal	$295,660	% of total project (≥ 40%)	47%
Total	$623,794	Total	100%

Category	Federal	Non-Federal	Total
Personnel	$161,580	$239,980	$401,560
Fringe Benefits	$48,474	$0	$48,474
Travel	$18,334	$0	$18,334
Equipment	$0	$0	$0
Supplies	$8,500	$0	$8,500
Contractual	$0	$0	$0
Construction	$0	$0	$0
Other	$48,446	$30,000	$78,446
Total Direct Costs	$285,334	$269,980	$555,314
Indirect Costs (≤ 15%)	$42,800	$25,680	$68,480
Total Project Costs	$328,134	$295,660	$623,794

Budget Justification (Federal)		
Category	Total Amount	Justification
Personnel	$161,580	TFS Water Resources Forester (1.5 FTE @ $36,500/year) TFS Biologist (0.62 FTE @ $42,000/year)
Fringe Benefits	$48,474	Fringe benefits are estimated at 30% of federal personnel costs.
Travel	$18,334	Travel in-state - $12,384 (12 trips per year x 4 staff x $129/trip per diem). Per diem consists of $83 per night lodging + $46 per night meals. Out of state travel – $5,950 (7 total trips @ $850 per trip. Average estimated expenses per trip are as follows: meals- $200, lodging - $275, and travel - $375) • SGSF WRC Annual Meeting (2 trips for coordinator) • Four State BMP Conference (1 trip for coordinator, 1 trip for 2 water resource foresters) NCASI BMP Effectiveness Symposium (1 trip for coordinator, 1 trip for water resources forester)
Equipment	$0	N/A
Supplies	$8,500	Office supplies - $1,956 Paper: $840 (paper @ $38/box x 14 boxes; various size envelopes @ $14/box x 12 boxes, business cards @ $70 each x 2 employees) Janitorial: $516 (Toilet paper @ 1.50/roll x 160 rolls; Paper towels @ $2/roll x 120 rolls, trash bags @ 14/box x 6 boxes; hand soap at $18/gal x 2 gallons) Calendars: $200 ($20/planner x 5 planners/yr x 2 yrs) Miscellaneous: $400 (note pads, post it notes, paper clips, staples, pens, pencils, tape, batteries, highlighters, folders, binders @ 200/yr) Computer related supplies - $6,544 Hardware: $1,200 (20% of cost of rack server for pre-harvest planning tool) $1,100 (Computer for GIS/remote sensing analysis) Software: $200 (ArcView license - $25/yr x 2 yrs x 4 computers) Ink: Color Laser = $ 1,600 ($200/cartridge x 4 cartridges/printer/yr x 2 printers x 2 yrs) Inkjet: $1,440 ($45/cartridge x 4 cartridges/printer/yr x 4 printers x 2 yrs) Data Storage: $375 (3 1-TB external hard drives at $100 each, 3 50-pack DVD-R spindles @ $25/each) Camera: $629 (2 digital cameras, case, memory cards @ 314.50/each)
Contractual*		N/A
Construction	$0	N/A
Other	$48,446	Newsletters - $8,000 (8 TWS @ 700/newsletter; 4 FLB @ 600/newsletter) Professional reports - $3,000 (200 Implementation Monitoring printed/mailed) Landowner Meetings $3,600 (3 mtgs/year @ $600/meeting x 2 yrs) Educational Materials $3,470 (2,000 wildfire rehab brochures, 1,000 fact sheets, 500 technical guides) Video clips - $7,200 (2 videos @ $3,600/video) Fuel expenses - $18,216 (800 miles/month x 4 staff x $.23/mile x 24 months) Copier rental - $2,160 ($90 per month x 24 months) Employee Training (Reg.) – $2,800 ($350/employee/yr x 4 employees x 2 yrs)
Indirect	$42,800	Recovered indirect cost (15%).

Budget Justification (Non-Federal)		
Category	Total Amount	Justification
Personnel	$239,980	TFS Program Coordinator, Water Resources (0.5 FTE - $30,000/year) TFS Water Resources Forester (1.0 FTE - $36,500/year) TFS Department Head (.32 FTE - $28,215/year) TFS District Foresters (.15 FTE - $6,500/year) TFS Staff Assistant (.35 FTE – $12,775/year) Non-Federal Project Cooperators ($12,000 – 20 hrs/month for 24 months @25/hr)
Fringe Benefits	$0	N/A
Travel	$0	N/A
Equipment	$0	N/A
Supplies	$0	N/A
Contractual*	$0	N/A
Construction	$0	N/A
Other	$30,000	TFA • landowner meetings - $10,000 (3 meetings/year @ $1,666.67 per meeting) • logger training - $10,000 (4 trainings/year @ 1,250 per training) • printing BMP literature - $10,000 (1,000 Landowner packets @ $5/packet; 5,000 BMP related brochures @ $1/brochure);
Indirect	$25,680	TAMU system indirect rate is 24%. Unrecovered indirect cost (9%).